

What is claimed is:

1. A method for transmitting data for use in an electronically stored and processed document or form having blanks or data entry fields for insertion of details or information from a mobile wireless data entry terminal to a remote location comprising the method steps of:

(a) displaying a first electronically stored form having a first blank data entry field for insertion of details or information and a second blank data entry field to a user of the mobile wireless data entry terminal;

10 (b) detecting a first input change in one of said first data entry field and second data entry field in response to a first user action sensed by the mobile wireless data entry terminal; and

(c) transmitting solely the data corresponding to said first input change in said first or second data entry field from the mobile wireless data entry terminal to a wireless receiver at the remote location.

2. The method for transmitting form data of claim 1, further comprising:

(d) detecting a second input change in the other of said first data entry field and second data entry field in response to a second user action sensed by the mobile wireless data entry terminal; and

20 (e) transmitting solely the data corresponding to said second input change in said first or second data entry field from the mobile wireless data entry terminal to said wireless receiver at the remote location.

3. The method for transmitting form data of claim 2, further comprising:

(f) providing an electronically displayed new form selection field visible to said user of the mobile wireless data entry terminal;

(g) detecting a third input change in said new form selection field in response to a third user action sensed by the mobile wireless data entry terminal;

5 (h) creating a record for a new form definition in response to said third input change detection;

(i) detecting an input change in said new form definition in response to a fourth user action sensed by the mobile wireless data entry terminal;

(j) defining a first new form data entry field in response to said detected change
10 in said new form definition; said first new form data entry field having a first new form data entry field name; and

(k) displaying said first new form data entry field name to said user of the mobile wireless data entry terminal.

4. The method for transmitting form data of claim 3, further comprising:

15 (l) storing said new form definition in a memory in the mobile wireless data entry terminal.

5. The method for transmitting form data of claim 4, further comprising:

(m) transmitting said new form definition from the mobile wireless data entry terminal to said wireless receiver at the remote location.

20 6. A method for defining an electronically stored and processed document or form having blanks or data entry fields for insertion of details or information when using a mobile wireless data entry terminal in the field, comprising the method steps of:

(a) providing a mobile wireless data entry terminal including an RF transceiver for transmission over government licensed frequencies and a control head including a display permitting a user to see a displayed data entry field, wherein the control head is configured to sense user actions on said displayed data entry field;

5 (b) providing an electronically displayed new form selection field visible to a user of the mobile wireless data entry terminal;

(c) detecting a change in said new form selection field in response to a first user action sensed by the mobile wireless data entry terminal;

(d) creating a record for a new form definition in response to said first user
10 action; and

(e) displaying said new form definition including displayed criteria.

7. The method for defining an electronically stored form of claim 6, further comprising:

(f) detecting a change in said new form definition in response to a second user
15 action sensed by the mobile wireless data entry terminal;

(g) defining a first new form data entry field in response to said detected change in said new form definition; said first new form data entry field having a first new form data entry field name; and

(h) displaying said first new form data entry field name to said user of the mobile
20 wireless data entry terminal.

8. The method for defining a data-entry form of claim 7, further comprising the step of:

(i) storing said new form definition including said new form data entry field name in a memory in the mobile wireless data entry terminal.

9. The method for defining a data-entry form of claim 7, further comprising the step of:

5 (i) transmitting said new form definition from the mobile wireless data entry terminal to said wireless receiver at the remote location.

10. A method for modifying or editing an electronically stored document or form having blanks or data entry fields for insertion of details or information when using a mobile wireless data entry terminal in the field, comprising the method steps of:

10 (a) providing a mobile wireless data entry terminal including a transceiver and a control head including a display permitting a user to see a displayed data entry field, wherein the control head is configured to sense user actions on said displayed data entry field;

(b) providing an electronically displayed saved form selection field visible to a
15 user of the mobile wireless data entry terminal;

(c) detecting a first user action indicating a selected form from said saved form selection field displayed on said mobile wireless data entry terminal;

(d) retrieving a record for said selected form in response to said first user action, said record comprising a form definition for the selected form;

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(e) displaying said selected form including displayed criteria on said mobile wireless data entry terminal; and

(f) detecting a second user action indicating a desire to modify said selected form definition; wherein said second user action detection step occurs in the mobile wireless data entry terminal.

11. The method for modifying or editing an electronically stored form of claim 10,
5 further comprising:

(g) detecting a desired change in said selected form in a first selected form data entry field in response to a third user action sensed by the mobile wireless data entry terminal;

(h) modifying said first selected form data entry field in response to said third
10 user action to generate a modified selected form definition; said first selected form data entry field having a first selected form data entry field name; and

(i) displaying said first selected form data entry field name to said user of the mobile wireless data entry terminal.

12. The method for modifying a data-entry form of claim 11, further comprising
15 the step of:

(j) storing said modified selected form definition including said first selected form data entry field name in a memory in the mobile wireless data entry terminal.

13. The method for defining a data-entry form of claim 12, further comprising the step of:

20 (k) transmitting said modified selected form definition from the mobile wireless data entry terminal transmitter to a wireless receiver at a remote location; wherein said transmitting step is accomplished either by transmission over an analog FM

communications channel or by transmission over a digital packet data network channel.

14. The method for defining a data-entry form of claim 13, further comprising the step of:

(l) receiving said modified selected form definition transmitted from the mobile
5 wireless data entry terminal in said wireless receiver at said remote location; said remote location comprising a dispatch center including a dispatch center computer.

15. The method for defining a data-entry form of claim 13, further comprising the step of:

(m) storing said modified selected form definition including said first selected
10 form data entry field name in a memory in the dispatch center computer.

16. The method for defining a data-entry form of claim 13, further comprising the steps of:

(n) providing an electronically displayed saved form selection field visible to a user of the dispatch center computer, wherein said modified selected form is indicated
15 in said saved form selection field;

(o) detecting a fourth user action indicating said modified selected form has been selected by said dispatch center computer user;

(p) retrieving a record for said modified selected form in response to said fourth user action, said record comprising said modified form definition for the selected form;

20 (q) displaying said modified selected form including displayed criteria on a display connected said dispatch center computer; and

(r) detecting a fifth user action indicating a desire to further modify said modified

selected form definition; wherein said fifth user action detection step occurs in the dispatch center.

17. A method for analyzing and displaying time-stamped position data from a mobile wireless data entry terminal having a unique mobile wireless data entry terminal identification indicator, comprising the method steps of:

(a) sensing the location of the mobile wireless data entry terminal at a selected time and generating a location data field in response thereto;

(b) storing said location data and said selected time;

(c) generating a data packet comprising said location data field, said selected time, and said unique mobile wireless data entry terminal identification indicator;

(d) transmitting said data packet from the mobile wireless data entry terminal to a wireless receiver at a base station equipped with a computer having a display;

(e) defining at least one established norm for a selected parameter selected from mobile wireless data entry terminal location, time, and unique mobile wireless data entry terminal identification indicator;

(f) comparing at least one of said location data field, said selected time, and said unique mobile wireless data entry terminal identification indicator to said established norm; and

(g) generating an alarm data field in the event that said comparison step indicates a condition that does not conform to said established norm.

18. The method of claim 17, further comprising the steps of:

(h) displaying a map indicating the location of said vehicle with said vehicle being

visually designated as not conforming to said established norm.

19. The method of claim 18, wherein said step of displaying a map with said vehicle being visually designated as not conforming to said established norm comprises displaying said vehicle on the map in a first selected color.

5 20. The method of claim 19, wherein said first selected color is red.

21. The method of claim 17, wherein said norm is vehicle location, and wherein said alarm data field is generated in the event that said vehicle is not in a selected location.

22. The method of claim 17, wherein said norm is vehicle location at a selected
10 time, and wherein said alarm data field is generated in the event that said vehicle is not in a selected location at said selected time,

23. The method of claim 17, wherein said norm is vehicle location within a selected geographically bounded area, and wherein said alarm data field is generated in the event that said vehicle is not in a selected geographically bounded area.

15 24. The method of claim 23, wherein said selected geographically bounded area is selected by a dispatch center user on said base station computer by identifying an enclosed selected area on a map displayed on said base station computer display.

25. The method of claim 17, wherein said norm is vehicle location within a selected geographically bounded area at a selected time, and wherein said alarm data
20 field is generated in the event that said vehicle is not in a selected geographically bounded area at said selected time.

26. The position transmitting method of claim 17, wherein the step of sensing

the location of the mobile wireless data entry terminal comprises sensing signals of three or more Global Positioning System satellites.

27. A method for transmitting time-stamped position data from a mobile wireless data entry terminal to a remote location comprising the method steps of:

5 (a) sensing the position of the mobile wireless data entry terminal at a selected time and generating a location data field in response thereto;

(b) storing said position data field with a selected time data field;

(c) determining whether a selected person is present in a vehicle carrying the mobile wireless data entry terminal and, in response, generating a person

10 present/absent data field;

(d) generating a data packet comprising said position data field, said selected time data field, said person present/absent data field and a mobile wireless data entry terminal identification indicator;

(e) transmitting said data packet from the mobile wireless data entry terminal to a
15 wireless receiver at the remote location.

28. The position transmitting method of claim 27, wherein the step of sensing the position of the mobile wireless data entry terminal at a selected time comprises sensing signals of three or more Global Positioning System satellites.

29. The position transmitting method of claim 27, wherein the step of determining
20 whether a selected person is present in a vehicle carrying the mobile wireless data entry terminal comprises determining whether an employee is present in the vehicle at a selected time.

30. The position transmitting method of claim 27, wherein the step of determining whether a selected person is present in a vehicle carrying the mobile wireless data entry terminal comprises determining whether a medical patient is present in the vehicle at a selected time.

5 31. The position transmitting method of claim 27, wherein the step of determining whether a selected person is present in a vehicle carrying the mobile wireless data entry terminal comprises determining whether a passenger is present in the vehicle at a selected time.

32. The position transmitting method of claim 27, further comprising the steps of:

10 (f) comparing a selected parameter comprising at least one of said position data field, said selected time data field, said person present/absent data field and said mobile wireless data entry terminal identification indicator to an established norm; and

(g) generating an alarm signal in the event that said comparison step demonstrates that said selected parameter does not conform to said established norm.

15 33. The position transmitting method of claim 32, further comprising the steps of:

(h) transmitting said alarm signal from the mobile wireless data entry terminal to a wireless receiver at the remote location.

34. A method for transmitting time-stamped position data from a mobile wireless data entry terminal to a remote location comprising the method steps of:

20 (a) sensing the position of the mobile wireless data entry terminal at a selected time and generating a location data field in response thereto;

(b) storing said position data field with a selected time data field;

(c) determining whether a vehicle carrying the mobile wireless data entry terminal is being tampered with and, in response, generating a vehicle tamper status data field;

(d) generating a data packet comprising said position data field, said selected time data field, said vehicle tamper status data field and a mobile wireless data entry terminal identification indicator;

(e) transmitting said data packet from the mobile wireless data entry terminal to a wireless receiver at the remote location.

35. The position transmitting method of claim 34, wherein the step of sensing the position of the mobile wireless data entry terminal at a selected time comprises sensing signals of one or more Global Positioning System satellites.

36. The position transmitting method of claim 34, wherein the step of determining whether the vehicle carrying the mobile wireless data entry terminal is being tampered with comprises detecting vehicle movement during an interval when the vehicle ignition is off and, in response, generating a signal indicating the vehicle is being moved.

37. The position transmitting method of claim 35, further comprising (f) generating an alarm signal in response to detecting said vehicle movement during an interval when the vehicle ignition is off.

38. The position transmitting method of claim 37, further comprising (g) actuating an audible car alarm in response to said alarm signal.

39. The position transmitting method of claim 27, further comprising the steps of: (f) comparing a selected parameter comprising at least one of said position data

field, said selected time data field, said vehicle tamper status data field and said mobile wireless data entry terminal identification indicator to an established norm; and

(g) generating an alarm signal in the event that said comparison step demonstrates that said selected parameter does not conform to said established norm.

5 40. An electronic communications protocol method for dynamically establishing and maintaining a communication link between transceivers, comprising the steps of:

(a) selecting a transmission channel;

(b) transmitting, on said transmission channel, a packet comprising a first sequence of hex characters ordered as "01h", a twelve byte sequence including a
10 numeric identification of the sending unit and a second sequence of hex characters ordered as "02h".

41. The electronic communications protocol method of claim 40, further comprising:

(c) transmitting, within said twelve byte sequence, a two byte mode field, a spare
15 byte selected from a MIN personality database, a base identification designator byte, six bytes comprising said numeric identification of said sending unit, and a two byte serial number.

42. The electronic communications protocol method of claim 41, further comprising:

20 (d) transmitting a two byte expansion code selected from said MIN personality database.

43. The electronic communications protocol method of claim 42, further

comprising:

(e) transmitting a three byte identification code identifying the intended destination of the packet.

44. The electronic communications protocol method of claim 43, further

5 comprising:

(f) transmitting a data stream having a selected length of up to 900 bytes.

45. The electronic communications protocol method of claim 44, further

comprising:

(g) transmitting a third sequence of hex characters ordered as "03h".

10 46. The electronic communications protocol method of claim 45, further

comprising:

(h) transmitting a two byte check sum field to complete the packet.

47. A method for defining an electronically stored and processed document or form having blanks or data entry fields for insertion of details or information when using

15 a mobile wireless data entry terminal in the field, comprising the method steps of:

(a) providing an electronically displayed form open selection field visible to a user of the mobile wireless data entry terminal;

(b) detecting a change in said form open selection field in response to a first user action sensed by the mobile wireless data entry terminal;

20 (c) reading a controls database in response to said first user action; and

(d) displaying a plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition.

48. The method for defining an electronically stored form of claim 47, further comprising:

(e) detecting a change in said form in a selected field type in response to a second user action sensed by the mobile wireless data entry terminal;

5 (f) adding a first form field type to said form definition in response to said detected change in said form field type; said first one of said form field types having a first new form data entry field name; and

(g) displaying said first new form data entry field name to said user of the mobile wireless data entry terminal.

10 49. The method for defining a data-entry form of claim 48, further comprising the step of:

(h) storing said new form definition including said first new form data entry field name in a memory in the mobile wireless data entry terminal.

50. The method for defining a data-entry form of claim 48, further comprising:

15 (h) transmitting said new form definition from the mobile wireless data entry terminal to a wireless receiver at a remote location.

51. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include a field type permitting the user to add a button.

20 52. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include a field type permitting the user to add a trigger.

53. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include a field type permitting the user to add a list.

54. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include a field type permitting the user to add a date.

55. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include a field type permitting the user to add a label.

56. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include a field type permitting the user to add a text field.

57. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include a field type permitting the user to add a check box.

58. The method of claim 47, wherein said plurality of field types corresponding to selected form data entry fields for possible inclusion in the form definition include field types permitting the user to add a button, a trigger, a list, a date, a label, a text field or a check box.

59. The method of claim 47, further comprising the method steps of:

(e) detecting a change in said form in a selected field type in response to a second user action sensed by the mobile wireless data entry terminal;

(f) adding a first form field type to said form definition in response to said detected change in said form field type; said first one of said form field types having a first new form data entry field name;

(g) displaying said first new form data entry field name to said user of the mobile wireless data entry terminal;

(h) generating a packet including said first new form data entry field name; and

(i) transmitting said packet from the mobile wireless data entry terminal to a wireless receiver at a remote location.

60. A method for protecting electronically stored and processed information when using a mobile wireless data entry terminal in the field, comprising the method steps of:

(a) providing a mobile wireless data entry terminal including a first RF transceiver and a control head including a memory and a display permitting a user to see a displayed data entry field, wherein said wireless data entry terminal has a unique identifier;

(b) providing a dispatch center including a computer, said dispatch center computer being configured to transmit and receive data via a second RF transceiver;

(c) prompting the mobile wireless data entry terminal control head user to input a password and disabling the wireless data entry terminal control head if said user does not input a password that is identical to a previously programmed password stored in said wireless data entry terminal control head memory, wherein said wireless data entry terminal control head is enabled only if said user does input a password that is identical

to said previously programmed password;

(d) if enabled, transmitting a registration signal from said mobile wireless data terminal to said dispatch center; said registration signal comprising at least said wireless data entry terminal unique identifier; and

5 (e) initiating a timer to measure the elapsed time between when said registration signal is transmitted and the occurrence of at least one predetermined subsequent event, wherein detecting that a reply signal is received from said dispatch center comprises a first predetermined subsequent event.

61. The information protection method of claim 60, further comprising:

10 (f) receiving said registration signal in said dispatch center and, in response, determining the time of receipt and storing said wireless data entry terminal unique identifier and the time of receipt; and

(g) transmitting a dispatch center confirmation signal to said wireless data entry terminal acknowledging said wireless data entry terminal registration signal.

15 62. The information protection method of claim 60, wherein detecting that a first selected interval has elapsed since said registration signal was transmitted is a second predetermined subsequent event, and, in response,

(f) transmitting a subsequent registration signal from said mobile wireless data terminal to said dispatch center; said registration signal comprising at least said
20 wireless data entry terminal unique identifier.

63. The information protection method of claim 62, wherein said first selected interval is less than one second.

64. The information protection method of claim 60, further comprising:

(f) disabling the mobile wireless data entry terminal in the event no confirmation signal is received from said dispatch center within a second selected interval.

65. The information protection method of claim 64, wherein said second

5 selected interval is thirty minutes.

66. The information protection method of claim 60, further comprising:

(f) deleting all stored data within the control head unit in the event no confirmation signal is received within a third selected interval.

67. The information protection method of claim 66, wherein said third selected

10 interval is seventy-two hours.

68. The information protection method of claim 66, further comprising:

(g) re-enable said mobile wireless data entry terminal control head only when said mobile wireless data entry terminal is physically returned to said dispatch.

69. A method for importing and modifying an electronically stored and processed

15 manifest having data entry fields for insertion of information pertaining to appointments in a geographic customer service area when using a mobile wireless data entry terminal in the field, comprising the method steps of:

(a) providing an electronically displayable manifest and storing said manifest on a dispatch center computer;

20 (b) combining said manifest with selected information stored elsewhere, said selected information comprising at least one of the following: driver information, schedule information, customer contact information, account information, appointment

time, and duration of appointment; and

(c) displaying said manifest with said selected information in a current information screen for a dispatch center user.

70. The manifest display method of claim 69, further comprising:

(d) automatically displaying a map indicating a bounded customer service area and a location of a vehicle assigned to carry out the appointments described in said manifest.

71. The manifest display method of claim 70, further comprising:

(e) sensing the location of the mobile wireless data entry terminal at a selected time and generating a location data field in response thereto;

(f) storing said location data and said selected time;

(g) generating a data packet comprising said location data field, said selected time, and said unique mobile wireless data entry terminal identification indicator;

(h) transmitting said data packet from the mobile wireless data entry terminal to a wireless receiver at dispatch center;

(i) choosing, from said manifest, at least one established norm for a selected parameter, said parameter being selected from: mobile wireless terminal location, time, and unique mobile wireless terminal identification indicator;

(j) comparing at least one of said location data field, said selected time, and said unique mobile wireless data entry terminal identification indicator to said established norm;

(k) generating an alarm data field in the event that said comparison step

indicates a condition that does not conform to said established norm; and

(l) displaying, on said map, an indication that said vehicle is not conforming to said established norm.

72. The manifest display method of claim 71, wherein the established norm is a schedule defined in said manifest.

73. The manifest display method of claim 72, wherein displaying step (l) comprises

displaying a vehicle's route in green when the vehicle's driver is on time according to the manifest, displaying a vehicle's route in red when the vehicle's driver is behind the manifest schedule and displaying a vehicle's route in yellow when the vehicle's driver is

ahead of the manifest schedule.

74. A method for processing and displaying an electronically stored manifest having blanks or data entry fields for insertion of details or information about appointments in a customer service area when using a mobile wireless data entry terminal in the field, comprising the method steps of:

(a) providing, on a dispatch center computer, a database containing a plurality of electronically stored pre-set manifests, said manifests including a start date and a repeat interval;

(b) combining said manifest with selected information comprising at least one of the following: driver information, schedule information, customer contact information, account information, appointment time, and duration of appointment;

(c) providing, in a first vehicle with a first driver, a mobile wireless data entry terminal having a control head with a memory and a display;

(d) selecting those manifests pertaining to said selected driver for a selected date;

5 (e) transmitting only the selected manifests to said selected driver on or before selected date.

75. The manifest processing method of claim 74, wherein said selecting step (d) comprises assigning said selected driver to a pre-set territory within the customer service area.

10 76. The manifest processing method of claim 74, wherein said selecting step (d) comprises assigning said selected driver a temporary manifest for a selected limited period.

77. The manifest processing method of claim 74, wherein said selecting step (d) comprises assigning a selected driver a changed manifest, and said transmitting step
15 (e) comprises transmitting the changed manifest immediately to the driver, while he or she is traveling.

78. The manifest processing method of claim 74, wherein said selected driver changes said manifest and transmits the changed manifest immediately to the dispatch center.

20 79. The manifest processing method of claim 78, wherein said driver changes comprise changes to the customer service area or changes to customer contact information.

80. The manifest processing method of claim 74, wherein said database contains a plurality of electronically stored pre-set driver characteristics,

81. The manifest processing method of claim 80, wherein said database of driver characteristics includes information on special skills for each driver,

82. The manifest processing method of claim 81, wherein said selecting step (d) comprises assigning a selected driver skill to a selected customer appointment.

83. The manifest processing method of claim 74, further comprising:

(f) during the day, sensing the location of the driver's mobile wireless data entry terminal at selected times and generating time stamped location data summarizing the day's travel, in response thereto;

(g) storing said time-stamped location data;

(h) transmitting said time stamped location data from the mobile wireless data entry terminal to a wireless receiver at dispatch center;

(i) comparing said manifest to said time-stamped location data;

(j) generating a "difference" indication in the event that said comparison step indicates that said driver's route was ahead of schedule or behind schedule, as compared to the manifest; and

(k) displaying, on said dispatch center display, a map including an indication that said driver's route was ahead of schedule or behind schedule, as compared to the manifest.